

Rosemary Elliott Smith

NSF Postdoctoral Fellow

Rice University
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Education

- 2024 **PhD in Mathematics**, advised by Alex Eskin at the University of Chicago.
2019 **M.A. in Mathematics**, University of Chicago.
2018 **B.S. in Mathematics**, *cum laude*, *Revelle College*, University of California, San Diego.

Professional Experience

- July 2024–June 2028 **NSF Postdoctoral Fellow and G.C. Evans Instructor**, *Mathematics Department*, Rice University.
2028 Researching dynamics, geometry, and measure rigidity. Mentor: David Fisher.
Summer 2019 **Applied Research Mathematician**, *National Security Agency*.
2019 Possessed Top Secret (TS)/Secure Compartmented Information (SCI) security clearance, with background investigation and full scope polygraph. Conducted research on blockchain technologies and crypto currencies.
Summer 2017 **Researcher**, *Collaborative Research Experience for Undergraduates (CURE)*, *Kemp Lab*, UC San Diego.
Researched random matrix theory, free probability, and facets of combinatorics as part of the CURE program. Mentor: Todd Kemp, Professor of Mathematics at UC San Diego.
January 2015–December 2017 **Head Database Developer**, *Levantine Cyber-Archeology Lab*, UC San Diego.
Led the development team for the UCSD cyber-archaeological database, under a University of California Office of the President Catalyst Grant. Led the on-site programming team at the excavation of a Mycenaean tomb in Desfina, Greece, in the summer of 2016. Mentor: Thomas Levy, Distinguished Professor of Anthropology at UC San Diego.

Honors and Awards

- NSF Postdoctoral Fellowship, \$190,000 (2024-2028)
- GFSP (formally National Physical Sciences Consortium Fellowship) \$120,000 (2018-2024)
- Mathematics Undergraduate Employee of the Year (2018) (for excellence in teaching)
- UCSD Physical Sciences Dean's Undergraduate Award for Excellence, \$1000 (2017)
- UCSD Revelle College Norris Award Recipient (2017) (for excellence in the humanities)
- Ernest Mort Revelle Student Leadership Award Recipient (2017)
- United States Presidential Scholar Candidate (2014)
- National Merit Finalist (2014)
- Century Bank Super Scholar (2014)
- Prize for Scientific Excellence, the Santa Fe Institute \$500 (2014)

- Los Alamos National Laboratory Employees' Scholarship Fund Bronze Scholar, \$4000 (2014)
- AP Scholar with Distinction (2014)
- AP Scholar with Honors (2013)
- Ventures Scholar (2013)
- National Hispanic Recognition Scholar (2013)
- National Honor Society Member (appointed 2013)

Publications

Math:

R.E. Elliott Smith. "Uniformly Expanding Random Walks on Manifolds." *Nonlinearity* 36, no. 11 (2022) DOI: 10.48550/ARXIV.2211.10483, URL: <https://dx.doi.org/10.1088/1361-6544/acfa5a>.

Elliott Smith, R.E., H. Huang, T.A. Kemp, Y. Ling, X. Luo, E. Lybrand, and J. Wang. "Random Matrices with Independent Diagonals." *in prep.*

Other:

Smith, F.A., **R.E. Elliott Smith**, S.K. Lyons, and J.L. Payne. "Body size downgrading of mammals over the late Quaternary." *Science* 360, no. 6386 (2018): 310-313.

Smith, F.A., **R.E. Elliott Smith**, S.K. Lyons, and A. Villaseñor. The accelerating influence of humans on mammalian macroecological patterns over the late Quaternary Invited manuscript, *Quaternary Science Reviews* 211, (2019): : 1-16.

Invited Talks

- 2024 **Dynamics Seminar**, University of Houston.
- 2024 **Geometry Seminar**, Rice University.
- 2024 **Group actions with Hyperbolicity and Measure Rigidity**, Institut Henri Poincaré.
- 2024 **Analysis Seminar**, Rice University.
- 2023 **Dynamics Seminar**, Universidad de la República.
- 2023 **Dynamics Seminar**, University of Chicago.

Other Talks

- 2024 **Women in Dynamical Systems and Ergodic Theory**, Centro di Ricerca Matematica Ennio De Giorgi.
- 2024 **Dynamics Student Days**, Brin Mathematics Research Center, University of Maryland.
- 2023 **WOMP 2023**, University of Chicago.
- 2023 **Beyond Uniform Hyperbolicity**, Poland.
- 2022 **WOMP 2022**, University of Chicago.
- 2022 **Graduate Student Summer Seminar**, University of Chicago.

Service

- September 2024– **Seminar Organizer**, Rice University.
Organizing the Geometry Seminar, along with several others.
- September 2022– **Seminar Organizer**, University of Chicago.
June 2024 Co-founded and organized a dynamics pre-seminar aimed at helping younger graduate students.
- September 2022 **Orientation Organizer**, University of Chicago.
Co-organized the graduate student orientation in 2022 (WOMP 2022), a week long math-heavy event intended to introduce new students to the department.
- Summer 2022 **Seminar Organizer**, University of Chicago.
Co-organized a dynamics student seminar in the summer of 2022
- May 2019– **Ombudsperson**, University of Chicago.
- September 2021 Elected and served as graduate student ombudsperson for the mathematics department at the University of Chicago for two years. Acted as a liaison between graduate students and faculty, handling issues ranging from minor to serious.

Teaching

Instructor of Record:

- Winter 2024 **Math 195, Linear Algebra**, University of Chicago.
- Fall 2022 **Math 15250, Mathematical Methods for Economic Analysis**, University of Chicago.
- Spring 2022 **Math 195, Linear Algebra**, University of Chicago.
- Fall 2021 **Math 153, Calculus 3**, University of Chicago.
- Spring 2021 **Math 133, Elementary Functions and Calculus 3**, University of Chicago.
- Fall 2020 **Math 131, Elementary Functions and Calculus 1**, University of Chicago.

Teaching Assistant:

- Spring 2020 **Accelerated Analysis 3**, University of Chicago, Alex Eskin.
- Winter 2020 **Accelerated Analysis 2**, University of Chicago, Beniada Shabani.
- Fall 2019 **Number Theory**, University of Chicago, John Boller.
- Spring 2018 **Abstract Algebra 2**, University of California, San Diego, Alireza Salehi Golsefidy.
- Winter 2018 **Abstract Algebra 2**, University of California, San Diego, Alireza Salehi Golsefidy.
- Fall 2017 **Linear Algebra**, University of California, San Diego, Todd Kemp.

Grants (excluding awards)

Frontiers of Innovation Scholars Program, Exploring the Basis of Human Knowledge, Learning and Creativity: *Music from a Map; the Relation of Sound Characteristics to Geography*. **R.E. Elliott Smith**, recipient; D. Meyer, mentor. (January, 2016-January, 2017). \$4,000.

Frontiers of Innovation Scholars Program, Understanding Cultures and Addressing Disparities in Society: *Greece Expedition*. **R.E. Elliott Smith**, recipient; T. Levy, mentor. (January, 2016-January, 2017). \$4,000.